



ASCE

ILLINOIS SECTION

NEWSLETTER

Vol. 36 No. 10

American Society of Civil Engineers

October 1995

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ILLINOIS SECTION NEWSLETTER

Mailed to all ASCE-IS dues-paying members

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Illinois Section — Zone III — District 8

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**Submission deadline
for the November Newsletter
is Oct. 12, 1995**

Suburban Sprawl: an Urban Planner's Dilemma

The American dream — spouse, children, and a house in the suburbs — is under attack again. However, this time the criticism is not directed at failed marriages or the fact that for many, the goal is to get their adult children to move out of the house. Rather, it has been your home in the suburbs that has come under fire.

"Bye-Bye, Suburban Dream," trumpets a May cover story in *Newsweek* magazine. The article claims that rampant development has meant that many cities approach the marginal disutility of suburban sprawl — the point at which each new subdivision subtracts more from

the quality of life than the new inhabitants contribute to the economy. *The Daily Herald* reports that at a recent conference on rebuilding cities in Chicago, the consensus reached was that suburban sprawl has created "enormous social, environmental, and economic costs, which until now have been hidden, or ignored by society."

Since the end of World War II, city (Chicago) dwellers have moved north, west and south in pursuit of safe streets, good schools and plenty of good space. Many of the older suburbs such as Hinsdale, Elmhurst and Evanston have distinct downtowns built around train stations. Newer suburbs, like Vernon Hills, Carol Stream and Orland Park, in which homes and shopping centers were planted on or near major arteries, often have no business center and no central public spaces at which their residents can gather. Perhaps the most graphic example

of the difference between old and new is west suburban Naperville, which has both the old central business and residential district surrounded to the west and south by a seemingly endless succession of new subdivisions. Unhappy with local traffic gridlock, residents requested a city count of trips (one-way drives) in the newer parts of town. To their dismay, the residents themselves generated the vast majority of traffic in their neighborhoods, taking an average of 14 car trips a day — about 32 percent more than the national average. "The traffic is not coming from Evansville, Indiana, and going

to Rockford," says Naperville chief traffic engineer Fred Ranck. "The subdivision generates almost all of their own traffic passing in front of their

houses." But in contrast, in older sections of town, where residents can walk to grocery stores, cleaners and schools, traffic is less of a problem. In these neighborhoods, the trips-a-day average is near the national average of 10.6.

Newsweek reports that maintaining a fleet of cars to navigate among the housing tracts, commercial strips and office complexes of the American landscape now takes 18 percent of the family budget. "Unless we create an alternative to the car, the car will continue to dominate the fabric of our neighborhood," according to architect and author Peter Calthorpe, a speaker at the recent conference.

Many urban analysts now recommend a return to the sort of com-
(Continued on page 2)

*"To build better suburbs,
planners should focus on
two principles: density
and civic space."*

'What You See Is What You Get'

The concept has been in existence since the early sixties: automation and visualization of roadway and site design from initial survey to final design drawings and construction.

Someone knew that a component of time management was the ability to effectively produce roadway and site plans by data extracted from surveys, topographic mapping, contours, and geometric elements in a timely and efficient manner. As a result, software was developed that enabled the designer to visualize two and three dimensional digital terrain models (dtm) for generation of plan views, contours, profiles, cross sections, and computation of earthwork quantities. Some argue that computerization is only as good as the operator, that a quality product can only be as good as its input. But all agree that automation and visualization provides a cost-effective means of developing plans at a high level of satisfaction.

Many software packages are now available for comprehensive design and development of roadway and site plans. They include GEOPAK, Eagle Point, AutoCivil and Civil

Master, to name a few. Many of these packages were developed based on the "what you see is what you get" concept for visualization of roadway elements on a computer monitor or a computer-generated plot. These packages are fully compatible with AutoCAD or MicroStation and allow engineers and designers to operate in these environments whereby the existing and proposed roadway features are interactively displayed. Many federal, state and local governmental agencies, along with professionals in the consulting industry, utilize one or more of these packages during the planning, plan preparation, and construction phases of civil engineering projects. The engineer is to effectively process coordinate geometry elements for horizontal and vertical alignments of roads, bridges, right-of-way parcels, parking lots, residential and commercial development sites, etc.

Responses have been positive from engineers and designers who have invested in one or more of these advanced software products. There is, however, a learning curve as with any new technology. Also, a cost is

associated with time spent for training and initial application, but most say the benefits outweigh the cost after extended use. In addition to plan preparation, these software packages have proven useful for presentations and report summaries. It saves considerable time if and when revisions to the plans are required. It also allows an effective means of communication between the project team members during the design process.

New technology usually begins with an idea followed by research and application. Someone may have asked "How might I generate 20 miles of proposed cross sections when the horizontal alignment is suddenly changed?" or "How might I present the proposed alignment to the public in a colored three-dimensional view following changes in the proposed alignment?" In any case, "what you see is what you get" is a long-awaited solution to the often cumbersome and tedious design process for many years to come.

Angela Wilkins
Project Engineer

Knight Architects Engineers Planners Inc.

Suburban Sprawl: An Urban Planner's Dilemma

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munities built in the 1950s, having downtowns with restaurants, grocery stores and parks, and containing a mix of close together single-family homes, townhomes and apartments. The beauty of these places, they claim, is that residents need not jump in their cars for each necessity, and that by running those errands on foot, they enjoy more face-to-face contact with their neighbors. Obviously, malls and supermarkets, with their vast selections and economies of scale, will never be supplanted by neighborhood shops and corner groceries. But it still should be possible to provide some of the necessities of life within walking distance of most people, they contend.

To build better suburbs, the analysts generally agree, planners should focus on two principles: density and civil space.

Density

A typical modern suburb has lot sizes ranging from one-half to one acre, and is laid out entirely for the

convenience of the automobile. Many planners feel that five or six housing units per acre, featuring a mix of detached homes, townhomes and apartments, is more desirable. *Newsweek* quotes Peter Katz, author of "The New Urbanism," "If you ask people if they want 'density,' they will always say 'no.' But if you ask them if they want restaurants and schools and other things close to where they live, they say 'yes.' Perhaps more people would choose to live in an urban setting if they were exposed to them." Those sentiments would cheer land developers, who often clash with zoning boards and planning commissions over lot size. *Newsweek* contends that if zoning boards weren't so fearful of "density," a walkable community could be achieved, with land set aside for open space and recreation.

Civic space

Urban planners and sociologists describe public space as a place that exclude no one and can host everything from festivals to in-line skating. Communities need parks, outdoor

recreational facilities, and town centers to foster a sense of civic identity. The task of creating downtowns that have not already developed as a result of commercial forces has been the enormous task of several Chicago suburbs. Naperville, with the advantage of an existing central business district, has built a stunning riverwalk, where on most summer evenings, hundreds of people, young and old, stroll and mingle.

The Daily Herald reports that Schaumburg has already spent \$7.5 million on reviving a dilapidated shopping center, to include retail and office space. Also, Carol Stream and Buffalo are considering developing a town center concept.

Urban planners, zoning boards and municipal planning commissions have the unenviable challenge of combining a myriad of economic and social forces to maintain civility to suburban life. Few engineers have as much impact on the quality of our lives as those who plan the places where we live, work and play.

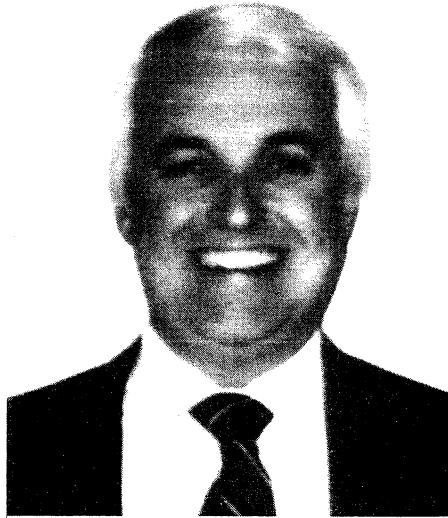
PRESIDENT'S NOTES

It seems like just a short time ago that I sat down to write this column for the first time, but on the other hand, it seems like a long time ago. I have honored the opportunity to serve you as President, and thank you once again. I hope you agree that we leave the IS at least as healthy as we found it a year ago. I appreciate the enthusiasm and effort that your board and committee members put forth over the last year to chart and keep the course. They did the majority of the work, and I hope that the membership will take the opportunity to thank them.

I want to use this last column to recap issues we have tried to address within the IS and some which are moving ahead through National that will affect the Society in the future. Your President-Elect, John Carrato, and I attended the District 8 Council Meeting recently, where we heard reports from Zone III Vice President Lou Graef and District 8 Directors Bill Croke and Dick Spencer. They provided us with a view from the Board of Directors that was much more palatable and relevant than an article in ASCE NEWS, or for that matter, this column. Several issues have been mentioned in this column previously, but I want to reiterate them as well as bring up the rest because of their potential for fundamental change in the Society.

Strategic Planning — The plan is progressing and may be adopted at the annual meeting in San Diego this month. The details and some of the fine points will continue to be worked out over the next several years. Locally, the IS is moving forward with its own version of a strategic plan, wherein we are attempting to formalize a plan to meet member needs and get the best bang for your dues buck. I hope that you have made your views known to John O'Holleran, Chair of the Finance Committee, through the questionnaire sent out with the summer newsletter.

Reorganization — Consideration is being given to creation of Academies within the Society to accommodate specialty practice and avoid having more splinter organizations form and dilute the representation that a professional organization should provide its membership. We



must maintain and grow our roster in order to be a viable representing entity.

Education and Qualifications — The issues of minimum qualifications to enter the profession, become registered, and remain registered are all under pressure for change. One thing is certain, that changes will occur; what is not certain is which way things will change or who will be controlling them. I don't see how this issue can be honestly separated from the compensation issue, and it's about time that we come to grips with the fact that compensation is tied wholly and only with the number of people perceived to be competent to fill a finite number of jobs. The obvious concern is the continuing trend of non-engineers to fill jobs that have traditionally been held by engineers. This forms the basis for the competing agenda to increase membership by including non-engineers in the Society. We approved a resolution at the District 8 Council (seven sections in the Midwest) to reconsider the constitutional amendment coming up for a vote by the general membership to allow full member status to technologies and other non-engineers. The concept of expansion may have some merit, but full membership could represent tacit acknowledgement of equivalency and the first step toward non-engineer leadership in the Society. Please read the proposed amendment carefully and be sure to vote when the opportunity presents itself. The apathy of the

Society membership presents a perfect opportunity for fundamental changes to be brought about by simple neglect.

Continuing Professional Development — Member opinion has apparently prevailed and it appears that this will not become a requirement for membership. More states are requiring continuing education for licensure, and the Society will attempt to standardize the reporting requirements.

Sustainable Development — This will probably not be proposed as an eighth canon at this time; however, some of the concepts may be brought into some of the other canons by word-smithing. A two-year extension has been requested by the Task Committee on Sustainable Development to continue to refine this concept.

I urge each of you to become familiar with these issues and make your position known. Thank you again for the opportunity to serve as your president.

Bill Babcock

Call for Abstracts: In-Situ Remediation of Contaminated Sites

The ASCE Illinois Section and its Geotechnical Engineering as well as Environmental Engineering and Water Resources Divisions are co-sponsoring the Fourth Annual Great Lakes Geotechnical and Geo-environmental Conference, which will be held on May 17, 1995 on the campus of the University of Illinois at Chicago. The theme of the conference is *in-situ remediation of contaminated sites*. The conference will provide a forum to share the experiences of both research and field applications of different in-situ methods for remediating contaminated soils and groundwater. This one-day conference will include presentations and a technical exhibit. Prospective authors of the papers, which will be included in the conference proceedings, are requested to submit a 250- to 300-word abstract by Dec. 1, 1995 to Professor Krishna Reddy, Department of Civil and Materials Engineering, University of Illinois at Chicago, 842 W. Taylor St., Chicago, IL 60607; 312/996-4755, fax 312/996-2426.

SECTION ACTIVITIES

Structural Group

The November dinner meeting, co-sponsored with the ACI Illinois Chapter, will feature Mr. Basile Rabbat of the Portland Cement Association. Mr. Rabbat will present some of the major changes that will be introduced in the new ACI 318-95 Building Code and Commentary scheduled for release later this year.

Date: Thursday, Oct. 16, 1995

Time: 5:15 p.m. cash bar
6:00 p.m. dinner

Place: Como Inn
546 N. Milwaukee, Chicago

Cost: \$25

RSVP: Barb Pries at (312) 263-1606

Seismic Bridge Design Short Course

The Illinois Section Structural Group is sponsoring a short course on seismic design of highway bridges, to be held March 13-16, 1995. The course will familiarize engineers with the AASHTO Specifications for Seismic Design of Highway Bridges through lectures, example problems and workbook assignments. The course handouts include the AASHTO Guide Specifications for Seismic Design of Highway Bridges, example problems and

course notes. This is an approved seismic short course by the Illinois Department of Professional Regulation. Therefore, individuals completing the course will meet the seismic knowledge requirement needed to renew an Illinois Structural Engineering License in November, 1996. Additional registration information will be provided in the upcoming newsletters. Registration will be limited. For further information, contact Jeff Smetters at (312) 648-1700.

Management Division

For information on the division or its activities or ADCOMM participation, contact Bob Ivarson at (312) 454-1060.

Administration COMMITTEE Meeting

Date: Oct. 19, 1995

Time: 5:30 p.m.

Place: Collins Engineers Inc.
165 N. Canal St., Suite 975
Chicago

Concrete Intermodal Terminals & Facilities

The division invites all ASCE members and their affiliates with transportation, facility or construction

interest to this symposium on diverse intermodal terminals and related infrastructure. The meeting is sponsored by the *Portland Cement Association, ASCE Illinois Section* and nine other organizations. For information or to register, contact Debbie Terrill, Portland Cement Association, 5420 Old Orchard Rd., Skokie, IL 60077; (708) 966-6200 x347; fax (708) 966-9701.

Date: Oct. 10, 1995

Time: 7:45 a.m. - 4:45 p.m.

Place: The Palmer House Hilton
17 E. Monroe, Chicago

Six-Sentence Marketing Plan

PROCESS — The six sentences in the last six newsletters aren't a one-shot deal. They're part of achieving a step-wise set of goals. We proceed from the start point to goal 1 along a specified path, and after a while we may decide to take a different approach and move to goal 2. No problem. We change some sentences, adjust and determine our new path of action and goals as we go forward and measure the results.

Write all six sentences, even if you cannot make progress on all of them to start. Define the ones you know. On the others, write the first words that you think of; you can always change it.



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Collins Engineers, Inc., a nationwide civil/structural and water resources engineering firm, is seeking a senior engineer with a *minimum* of ten years experience to be the **Regional Manager** of our Williamsburg, Virginia office. The Virginia office is five years old with a work backlog and an existing staff. Job responsibilities will include managing existing workload, cultivating client base, management of office staff and marketing of CEI services in the eastern region. *Qualified candidates* with a strong engineering background in transportation, structures, or waterfront facilities are encouraged to submit a resume and cover letter. A competitive salary and benefits package is being offered.

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For additional information please contact Thomas Collins at (312)454-1060.

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165 North Canal Street, Suite 975, Chicago, Illinois 60606

Geotechnical Division

Geotechnical Division meetings are held every second Tuesday of the month, September through May.

Time: 5:30 p.m. cash bar
6:30 p.m. dinner
7:30 p.m. presentation

Place: Como Inn
546 N. Milwaukee, Chicago

Cost: \$25 with reservations, \$30 at the door, \$5 for students with reservations, \$10 for faculty with reservations.

RSPV: Adam Moghamis at (708) 963-3444 by noon on the Friday preceding the meeting.

October Dinner Meeting

The October dinner meeting will consist of a driven piling workshop presented by the Deep Foundations Institute (DFI), with a panel of 10 speakers from DFI's Driven Pile Committee.

Date: Oct. 10, 1995

November Dinner Meeting

The November dinner meeting will be jointly sponsored by the local chapter of the Association of Engineering Geologists. Look for details in the next newsletter.

Date: Nov. 12, 1995